

WHAT IS CLAIMED IS:

1. An anti-cross threading nut, comprising:  
a nut body having first and second open ends at opposite sides thereof and a passage extending between said first and second open ends; and  
a plurality of threads extending over a predetermined axial extent of said passage to define a threaded region, a remaining portion of said passage being unthreaded up to said first end to define an unthreaded counterbore, said first end defining an inlet opening into said unthreaded counterbore for receiving a correspondingly threaded shank member, said inlet opening including cross threading engagement preventing means for preventing cross threading engagement of said shank member with said inlet opening when said shank member is positioned in said inlet opening at an off-angle greater than an acceptable misalignment angle, and tactile feedback providing means for causing one of said nut body and said shank member to vibrate when said nut body and said shank member are caused to be connected by use of a power tool when said shank member is positioned in said inlet opening at said off-angle.
2. The anti-cross threading nut of claim 1, wherein said unthreaded counterbore has a depth and a diameter that prevent the threads of said nut from engaging matching threads of said shank member when said shank member is positioned in said inlet opening at said off-angle.
3. The anti-cross threading nut of claim 1, comprising said tactile feedback providing means for causing one of said nut body and said shank member to vibrate with progressively larger vibrations when said nut body is connected to said shank member by a power tool when said shank member is positioned into said inlet opening at progressively larger said off-angles.
4. The anti-cross threading nut of claim 1, wherein said tactile feedback providing means cause said nut body to vibrate when said nut body is driven by a power tool over said shank member.

5. An anti-cross threading nut, comprising:

a nut body having first and second open ends at opposite sides thereof and a passage extending between said first and second open ends; and

a plurality of threads extending over a predetermined axial extent of said passage to define a threaded region, a remaining portion of said passage being unthreaded up to said first end to define an unthreaded counterbore;

wherein said first end defines an inlet opening into said unthreaded counterbore for receiving a correspondingly threaded shank member, said inlet opening including alternating peaks and valleys, and either said peaks or said valleys are radiused and define a lead in radius to prevent cross threading engagement of said shank member with said inlet opening.

6. The anti-cross threading nut of claim 5, wherein an axial extent of the unthreaded counterbore is structured to prevent the threads of said nut from engaging matching threads of said shank member when said shank member is inserted in said inlet opening at an entry angle greater than 5°.

7. The anti-cross threading nut of claim 5, wherein the others of said peaks and said valleys do not extend into the unthreaded counterbore.

8. The anti-cross threading nut of claim 5, wherein the others of said peaks and said valleys extend into the unthreaded counterbore.

9. The anti-cross threading nut of claim 5, wherein said peaks define said lead in radius, and each of said valleys includes a cylindrical or conical surface.

10. The anti-cross threading nut of claim 5, wherein said peaks define said lead in radius, and each of said valleys includes a planar surface.

11. The anti-cross threading nut of claim 5, wherein said peaks define said lead in radius, and each of said valleys includes a bottom of a generally rectangle shape.

12. The anti-cross threading nut of claim 5, wherein said valleys define said lead in radius, and said peaks include raised bumps.

13. The anti-cross threading nut of claim 12, wherein said raised bumps have curved and smooth external surfaces to prevent cross threading engagement of said shank member with said bumps.

14. The anti-cross threading nut of claim 12, wherein said unthreaded counterbore includes an inner cylindrical surface that is smooth over an entire axial extent thereof from the inlet opening to the intersection between the threaded region and the unthreaded counterbore.